Proceedings of 29th International Business Research Conference
24 - 25 November 2014, Novotel Hotel Sydney Central, Sydney, Australia, ISBN: 978-1-922069-64-1

Capital Budgeting Practices in Developed and Emerging Countries: Divergent Or Convergent?

Puwanenthiren Pratheepkanth[a], Samanthala Hettihewa[b*] and Chris S. Wright[c]

This research adds to the existing literature by using a mixed-methods approach to theoretically and empirically investigate how capital budgeting techniques and applications diverge between developed and emerging countries. A sample of 150 firms in each of the case-study-exemplar countries of Australia and Sri Lanka yielded effective-response rates of 31 and 49 percent, respectively. This study shows that, Australian firms tend to rely heavily on sophisticated capital budgeting practices and that while payback-period techniques continue to be used, that usage is declining. Scenario analysis and sensitivity analysis are, also, widely utilised by Australian companies. In contrast, Sri Lankan firms tend to use payback period as the primary method for evaluating capital investment and scenario analysis is often applied. The choice of whether to use more sophisticated techniques vs. simpler alternatives tends to vary with a firm's attributes (size, available human capital, etc.) as well as the economic and financial market development around the firm.
These findings suggest that a firm's choice of capital budgeting techniques tends to be more related to the capabilities inherent in the firm than it is to the culture in which the firm is embeded.

Keywords: Capital Budgeting, Discounted and Non-Discounted Cash Flows

JEL Codes: G10, G11 and G31

1 Introduction

Among the most important decisions made by financial managers, investment and financing decisions often interact heavily with options, availability and the ability to accept capital budgeting techniques (CBT) where capital budgeting(CB) is defined as the practice of analysing investment opportunities in long term assets. While there is ample literature on CB there is little research comparing CBT in developed and emerging markets.

This study seeks to investigate those differences via a mixed-method approach involving a review of extant literature and analysis of responses to a questionnaire distributed to a randomly selected sample of Australian and Sri Lanka firms.

This paper is organised as follows: The literature review is summarised in Section 2; Section 3 discusses the methodology; Findings are presented in section 4; Section 5 addresses the findings and Section 6 gives the conclusions along with limitations and suggestions for future research.

[ab] Mr. Puwanenthiren Pratheepkanth, Email: p.pratheepkanth@federation.edu.au; Dr S.hettihewa, Federation Business School, Federation University Australia, POBox 663, Ballarat, Vic 3353, Australia. Tel: 03 53279158
* Corresponding Author: Dr. Samanthala Hettihewa, Email: s.hettihewa@federation.edu.au
[c] Dr Chris S Wright, Higher Education Faculty, Holmes Institute, Australia. Tel: 03 96622055 Email: cwright@homes.edu.au

2 Literature Review

Capital budgeting choices are vital to a firm's success (Duchin and Sosyura 2013; Wnuk-Pel 2014). As capital expenditure typically involves large outlays of funds, firms must ascertain the best way to raise and repay these funds and, as most CB decisions entail a long-term commitment, capital scheduling decisions are critical. The selection of appropriate CBT (as part of making capital investment decisions) is a vital managerial activity (Roubi, Barth and Faseruk 2011; Wnuk-Pel 2014). Although many researches have examined CB practices in many different aspects, a comparative perspective of CB has been sporadically (Peel 1999; Graham and Harvey 2001). The existing literature suggests that the selection of a CBT may be idiosyncratic to each company or be dictated by the surrounding environment. Consequently, this study focuses on the CB practices in two countries of different economic development.

Australia has established business practices with corporate-ethics standards that are perceived as very high and Sri Lanka has a relatively small, open and emerging economy.

Investment decisions typically deal with appraisal techniques. Measuring the extent to which firms employ selected CBT has been the general theme of several studies over the past. (Graham and Harvey 2001; Truong, Partington and Peat 2008; Bennouna, Meredith and Marchant 2010; Maroyi and Margaretha, 2012). These techniques can be classified into two classes: those that take into account the time value of money and those that do not, such as discounted cash flow (DCF): net present value (NPV) and internal rate of return (IRR) (Tappura, Sievanen, Heikkila, Jussila and Nenonen 2014). Other two commonly used techniques that do not take into account the time value of money: the payback period (PBP) and the accounting rate of return (ARR).

Survey results of CB practices have been done since 1950s and many have focused on developed countries (DCs) such as the United States (Shao and Alan 1996: Graham and Harvey 2001), the United Kingdom (Arnold and Hatzopoulos 2000; Alkaraan and Northcott 2006) and Australia (Freeman and Hobbes 1991). In contrast, there are a relatively small number of studies emphasising CB evaluation techniques in developing countries (Kester and Chong 1998; Chan, Kamal and William 2004; Satish, Sanjeev and Roopali 2009; Hassan, Hosny and Vasilya 2011; Maroyi and Margaretha 2012). As a company grows in general capabilities, its capacity to engage in CBT is also enhanced (Block 1997; Graham and Harvey 2001; Ryan and Ryan 2002).

Different CB methods: DCF techniques such as NPV and IRR have become the dominant methods of evaluating and ranking proposed capital investments (see Table 1).The use of DCF methods has increased from 58 to 84 percent from1975 to 1986. IRR was used by 42 percent of firms, as compared 23 percent of NPV. However, PBP was most widely used. Large firms are using either IRR or NPV and over 90 percent of small and medium companies are using these methods (Pike 1996; Arnold and Hatzopoulos 2000; Alkaraan and Northcott 2006; Brounen, Jong and Koedijk 2004). Comparing existing results of CB practices in the Canada overtime generally appears to indicate that the analytical techniques used by companies have increased in terms of sophistication (Jog and Srivastava 1995; Bennouna, Meredith and Marchant 2010; Baker, Dutta and Saadi 2011). In particular DCF use appears to have increases from 1960s to 1990s. Recently NPV is now widely utilised among Candian firms (Bennouna, Meredith and Marchant 2010; Baker, Dutta and Samir 2011). McMahon (1981), Lilleyman (1984), and Freeman and Hobbes (1991) stated an increase in the use of DCF techniques in Australia from 52 to 75 percent of respondents from 1979 to 1989. Recently, Troung, Partington and Peat (2008) found that 94 percent of respondents used NPV, followed by PBP and IRR. DCs on average use more sophisticated CBTs while the use of NDCF techniques exist. The findings for developing countries, seem to ascribe equal importance to DCF and NDCF techniques (Anand 2002; Verma, Gupta and Batra 2009; Haddad, Sterk and Wu 2010) (seeTable 2).

Table 1: CBTs in Australia, Canada UK and the US

Author	Publishing year	Country	Most favoured	DCF (%)		NDCF (%)	
				Using IRR	Using NPV	Using PBP	Using ARR
Freeman & Hobbebes	1991	Australia	NPV	72	75	44	33
Truong, Partington, & Peat	2008	Australia	NPV	81	94	90	57
Jog & Srivastawa	1991	Canada	IRR	62	41	53.7	14.9
Bennouna, Meredith & Marchant	2010	Canada	NPV	87.7	94.2	N/A	N/A
Baker, Dutta & Saadi	2011	Canada	NPV	68.4	74.6	67.2	39.7
Pike	1986	UK	PBP	75	68	92	56
Ballantine, Galliers & Stray	1995	UK	PBP	7	3	16	11
Arnold & Hatzopoulos	2000	UK	IRR	68	62	46	41
Brounen, Jong & Koedijk	2004	UK	IRR	53.13	46.97	69.23	38.10
Block	1997	USA	PBP	16.4	11.2	42.7	22.4
Graham & Harvey	2001	USA	IRR	75.61	74.93	56.74	20.29
Ryan & Ryan	2002	USA	NPV	76.7	85.1	52.6	14.7

Table 2: CBTs in developing countries*

Author	Publishing year	Country	Most favoured	DCF (%)		NDCF (%)	
				Using IRR	Using NPV	Using PBP	Using ARR
Anand	2002	India	IRR	85	66.3	67.5	34.6
Verma, Gupta & Batra	2009	India	NPV/PBP	10	40	40	26.7
Leon, Isa & Kester	2008	Indonesia	PBP	63.6	63.6	86.4	40.9
Wong, Farragher, & Leung	1987	Malaysia	PBP	N/A	47	60	42
Wong, Farragher, & Leung	1987	Singapore	PBP	N/A	31	52	52
Kester, Chang, Echanis et al.,	1999	Singapore	PBP	88	86	98	80
Haddad, Sterk & Wu	2010	Taiwan	PBP	47.83	30.43	52.17	26.09

*Notes: Percent of using discounted and non-discounted methods among the developing countries

3 Research Methodology

After excluding financial, investment and securities sector firms this study considered 200 listed firms from S&P/ASX200 on the Australian Securities Exchange (ASX) and 289 listed firms on the Colombo Stock Exchange as at February 2013.

Only the listed firms for the illustration period were considered and the population for Australian is 150 and that for Sri Lankan is 150 listed firms. The questionnaires were posted in 2014. The effective response rate was 31.47 and 48.67 percent respectively for Australia and Sri Lanka.

4 Findings

CB Practices

NPV and IRR are the most popular CB planning and evaluation techniques, with 98 percent of Australian firms reporting they use these techniques (Table 3). However PBP is also prevalent (83 percent). Whereas, most Sri Lankan respondents select PBP and IRR as most regularly used approaches. The NPV method is less prevalent in Sri Lanka. Many Australian and Sri Lankan companies still use the PBP. Only 51 percent of Australian companies use ARR as the prevalent CBT. DPP and ARR are clearly the least popular in Sri Lanka. Table 3 also notes that the mean values for the NPV and IRR techniques are 4.62 and 4.16 respectively in Australia whereas the mean value for the PBP and IRR are 4.01 and 3.78 of the Sri Lankan companies respectively. Also DCF and NDCF are significantly employed by finance officers with bachelor degree in both countries (Table 3). The ARR and NPV are significantly used finance officers with PhD in Sri Lanka whereas finance officers with master degree are more likely to use DPP in Australia. Finance officers between 25 and 55 years are significantly more likely to use PBP, NPV and IRR in both countries whilst most mature finance officers (>55) in Sri Lanka are likely to use DPP, ARR and NPV than PBP and IRR (Table 4). Table 5 notes NPV and IRR methods are significantly employed by more experienced (>16) finance officers in both countries. Whereas less experienced Australian finance officers (1-5) are more likely to use DCF and NDCF than Sri Lankan finance officers. Table 6 shows discounted and non- discounted techniques are extensively utilised among consumer stables, materials and consumer discretionary sectors in both countries. Although discounted and non-discounted cash flow techniques are also most popular among Sri Lankan health care and industrial sectors. The results also reveal that Australian utilities employ NPV and IRR significantly more often than Sri Lankan utilities. Table 7 notes Australian large firms use NPV and IRR techniques significantly more than Sri Lankan large firms. Though PBP and DPP techniques seem to be significant popular among Sri Lankan companies (250-500 employees). Among highest domestic earned companies are more likely to use NPV and IRR in Australia (Table 8). However, the highest domestic earned Sri Lankan respondents are more inclined to use DPP and ARR techniques. Domestic owned companies in both countries are much more likely to use the discounted and non-discounted cash flow techniques than foreign owned companies (Table 9). Sri Lankan foreign owned companies are more inclined to use an IRR method. As shown in Table 10, high risk firms in Australia are significantly stating they use NPV, IRR and DPP as compared to Sri Lankan high risk firms and also results note that there seems some difference with respect to the use of CBTs between Sri Lankan lower risk and high risk firms.

Table 3 CBT with education background

Techniques	Australia							Sri Lanka						
	Frequently/ Mostly	Mean	Education Background					Frequently/ Mostly	Mean	Education Background				
			Diploma	Bachelor	Honours	Master	PhD			Diploma	Bachelor	Honours	Master	PhD
PBP	83	4.16	0	4**	4.08**	4.40	4	85	4.01	3	2**	2.67	3	3
DPP	36	2.87	0	3.25**	3.08	2.67**	3	30	2.81	4.22	3.11**	3.00**	3.83**	3.72
ARR	51	3.24	0	3.63**	3.34	2.93	2	24	2.77	3.64	2.21**	2.21**	3.57**	3.93**
NPV	98	4.62	0	4.75**	4.42**	4.80**	3.50	56	3.64	4.16	2.74**	2.77	3.55**	3.80**
IRR	98	4.62	0	4.88**	4.42**	4.47	5	67	3.78	3.80	3.80**	3**	3.80	3.80

Table 4 CBT with age

Techniques	Australia						Sri Lanka					
	Frequently/ Mostly	Mean	Age group				Frequently/ Mostly	Mean	Age group			
			<25	25-35	35-55	>55			<25	25-35	35-55	>55
PBP	83	4.16	3	4.13**	4.30**	4.00	85	4.01	0	4.38**	4.00**	3.86
DPP	36	2.87	3	3	2.70	3.00	30	2.81	0	3.63**	2.73	2.64**
ARR	51	3.24	3	3.34**	3.20	3.22	24	2.77	0	3.25	2.76	2.50**
NPV	98	4.62	5	4.74**	4.60**	4.44	56	3.64	0	3.75**	3.69**	3.43**
IRR	98	4.62	5	4.74**	4.55**	4.56	67	3.78	0	4.00**	3.82**	3.50

Table 5 CBT with experience

Techniques	Australia						Sri Lanka					
	Frequently/ Mostly	Mean	Management Experience				Frequently/ Mostly	Mean	Management Experience			
			1-5	6-10	11-15	>16			1-5	6-10	11-15	>16
PBP	83	4.16	4.27**	3.93**	4	4.56	85	4.01	4.50	4.10**	3.82**	4.13
DPP	36	2.87	3.27**	2.86	2.36	3	30	2.81	4	3.20**	2.41**	2.97
ARR	51	3.24	3.18**	3.43**	3	3.34	24	2.77	3	3.20**	2.59**	2.78**
NPV	98	4.62	4.91**	4.36**	4.45**	4.89**	56	3.64	3	4.00	3.90	3.34**
IRR	98	4.62	4.82**	4.50**	4.55**	4.67**	67	3.78	3.50	4.30**	3.83**	3.59**

Table 6 CBT with industrial sector

Techniques	Frequently/ Mostly	Mean	Australia: Industry Sectors								
			Utilities	Information	Energy	Telecom	Industrials	Consumer stables	Materials	Health Care	Consumer Discretionary
PBP	83	4.16	3.20	4.50	5	3.67	4.34	4.30**	4.17**	4.67	3.83**
DPP	36	2.87	2.60	1	2.75	2	4.17	3**	2**	4.34	2.83**
ARR	51	3.24	2.80	3.50	3	2.34	4.34	3.80**	1.83**	4.34	3**
NPV	98	4.62	4.80**	4	4.25	4.34	5	4.60**	4.83**	4.67	4.50**
IRR	98	4.62	4.80**	5	4.75	4.34	4.84	4.60**	4.50**	4.34	4.50**

Techniques	Frequently/ Mostly	Mean	Sri Lanka: Industry Sectors								
			Utilities	Information	Energy	Telecom	Industrials	Consumer stables	Materials	Health Care	Consumer Discretionary
PBP	85	4.01	5	4	4	4	4.15**	3.71**	4.13**	3.86**	4.08**
DPP	30	2.81	4	2	2.5	2	2.70**	2.86**	3**	2.13**	3.54**
ARR	24	2.77	3	2	2.25	2.34	2.85**	2.64**	2.88**	2.38**	3.31**
NPV	56	3.64	4	4	4	3.67	3.75**	3.50**	3.5**	3.5**	3.62**
IRR	67	3.78	5	4	4	3.67	3.75**	3.93**	3.75**	3.75**	3.54**

Table 7 CBT with number of employees

Techniques	Australia						Sri Lanka					
	Frequently/ Mostly	Mean	Number of Employees				Frequently/ Mostly	Mean	Number of Employees			
			<100	100-250	250-500	>500			<100	100-250	250-500	>500
PBP	83	4.16	5	4	5	4.08	85	4.01	0	3.43	4.05**	4.09
DPP	36	2.87	1	2	5	2.88**	30	2.81	0	2.71	2.26**	3.04**
ARR	51	3.24	1	2	4.5	3.34**	24	2.77	0	2.86	2.53	2.85**
NPV	98	4.62	5	4	5	4.60**	56	3.64	0	3.86**	3.32	3.74
IRR	98	4.62	4.5	5	4.5	4.63**	67	3.78	0	4**	3.63	3.81

Table 8 CBT with domestic income

Techniques	Australia						Sri Lanka					
	Frequently/ Mostly	Mean	Domestic Income				Frequently/ Mostly	Mean	Domestic Income			
			<20	20-40	40-80	>80			<20	20-40	40-80	>80
PBP	83	4.16	4	4.25	4.10**	4.18	85	4.01	4	4	3.73**	4.15
DPP	36	2.87	2	3.75	2.10	3.11**	30	2.81	4	3.5	2.41**	2.91**
ARR	51	3.24	1.67	3.75	2.70	3.54	24	2.77	4	4.5	2.55	2.74**
NPV	98	4.62	4.67	4.75**	4.60**	4.61**	56	3.64	4	2.5	3.55**	3.72
IRR	98	4.62	4.34	5	4.50**	4.64**	67	3.78	4	4	3.81**	3.74

Table 9 CBT with ownership

Techniques	Australia				Sri Lanka			
	Frequently/Mostly	Mean	Ownership		Frequently/Mostly	Mean	Ownership	
			Domestic	Foreign			Domestic	Foreign
PBP	83	4.16	4.10**	5	85	4.01	4**	4
DPP	36	2.87	2.92**	2	30	2.81	2.81**	2.8
ARR	51	3.24	3.30**	3	24	2.77	2.76**	2.60
NPV	98	4.62	4.60**	5	56	3.64	3.66**	3.60
IRR	98	4.62	4.65**	4	67	3.78	3.78**	4**

Table 10 CBT with overall risk situation

Techniques	Australia							Sri Lanka						
	Frequently/ Mostly	Mean	Overall Risk Situation					Frequently/ Mostly	Mean	Overall Risk Situation				
			Very High	High	Moderate	Low	Very Low			Very High	High	Moderate	Low	Very Low
PBP	83	4.16	4.75	3.95	4.32**	3.67	0	85	4.01	0	3.67	4.13**	3.77**	5
DPP	36	2.87	2**	2.79**	2.95	4	0	30	2.81	0	2.34	2.79	2.86**	4
ARR	51	3.24	2.50	3.42	3.16	3.67	0	24	2.77	0	2.67	2.77	2.77**	3
NPV	98	4.62	4.25	4.63**	4.68**	4.67	0	56	3.64	0	4	3.66**	3.60**	3
IRR	98	4.62	5	4.63**	4.53**	4.67	0	67	3.78	0	4.34	3.77**	3.77**	3

Likert scale of 1 (never) to 5 (frequently) used. ** denotes significant at the 5% level.

Risk assessment Techniques (RAT)

The results in Table 11 illustrate that scenario approach and sensitivity analysis are the extensively used techniques in Australia, whereas the Sri Lankan companies, 79 percent of respondents indicate that they use scenario approach widely, Compared to the Australian companies, Sri Lankan companies appear to use the scenario approach more often. Table 11 also presents the mean values for the scenario approach and sensitivity analyses. Compared to the Australian finance officers with PhD degree, Sri Lankan counterparts use probabilistic (Monte Carlo) simulation more often (mean vs pairwise *t* test). Table 12 reports the use of scenario approach and sensitivity analyses are significantly more popular among 25 to 35 and 35 to 55 age groups in Australia while more mature finance officers (>55) are more inclined to use sensitivity analysis, decision tree approach, probabilistic (Monte Carlo) simulation and risk adjusted discount rate in Sri Lanka than Australian mature finance officers. Tables 13, 14 and 15, show (respectively) the variation in managerial experience, firm industry-sector and employee numbers. Table 16 illustrates the relationship between domestic earning and RAT. Table 17 indicates that domestic owned companies in both countries are more likely to use all these risk assessment tools. As shown in Table 18, high risk firms in Australia are significantly stating they use risk adjusted discount rate as compared to Sri Lankan high risk firms.

Table 11 RAT with education background

Techniques	Australia							Sri Lanka						
	Frequently/ Mostly	Mean	Education Background					Frequently Mostly	Mean	Education Background				
			Diploma	Bachelor	Honours	Master	PhD			Diploma	Bachelor	Honours	Master	PhD
Scenario	76	4.04	3.81	4.25**	4.00**	5.00	4.04	79	4.25	3.00	4.34**	4.07	4.42	4.20
Sensitivity	76	3.94	3.94	3.75**	4.00	4.50	2.94	34	3.18	3.34	3.11**	3.07	3.10**	3.40
Decision tree	31	3.04	3.19	3.00**	2.80	4.00	3.04	12	2.92	2.34	2.78**	2.93	2.97**	3.20
Monte Carlo	13	2.87	2.69	3.17	2.67	4.00**	2.87	13	2.66	2.34	2.67	2.86	2.58**	**2.40****
Risk adjusted	16	2.56	2.56	2.67	2.40	3.00**	2.56	29	3.04	2.67	2.94**	3.21	2.97**	3.60

Table 12 RAT with age

Techniques	Australia						Sri Lanka					
	Frequently/ Mostly	Mean	Age group				Frequently/ Mostly	Mean	Age group			
			<25	25-35	35-55	>55			<25	25-35	35-55	>55
Scenario	76	4.04	3.00	4.27**	4.05**	3.78	79	4.25	0.00	3.75	4.22**	4.64
Sensitivity	76	3.94	5.00	4.00**	4.10**	3.34	34	3.18	0.00	3.88**	3.24	2.57**
Decision tree	31	3.04	1.00	3.13**	2.95	3.34	12	2.92	000	3.00	2.88	3.00**
Monte Carlo	13	2.87	1.00	2.93	2.75	3.23	13	2.66	0.00	3.38	2.49**	2.86**
Risk adjusted	16	2.56	3.00	2.40	2.45	3.00	29	3.04	0.00	3.88**	2.90	3.07**

Table 13 RAT with experience

Techniques	Australia						Sri Lanka					
	Frequently/ Mostly	Mean	Management Experience				Frequently/ Mostly	Mean	Management Experience			
			1-5	6-10	11-15	>16			1-5	6-10	11-15	>16
Scenario	76	4.04	4.18**	4.14**	3.82**	4.00	79	4.25	4.50	3.70**	4.17**	4.47**
Sensitivity	76	3.94	4.09**	3.79**	4.09**	3.78	34	3.18	3.50	3.60**	3.24	2.97**
Decision tree	31	3.04	2.73**	3.36**	2.82	3.23	12	2.92	3.50	2.90**	2.86	2.94**
Monte Carlo	13	2.87	2.64**	3.00	3.09	2.67	13	2.66	3.50	3.00	2.41**	2.72**
Risk adjusted	16	2.56	2.73**	2.89	2.90	2.34**	29	3.04	3.50	3.50**	2.97	2.94**

Table 14 RAT with industrial sectors

Techniques	Frequently/ Mostly	Mean	Australia: Industry Sectors								
			Utilities	Information	Energy	Telecom	Industrials	Consumer stables	Materials	Health Care	Consumer Discretionary
Scenario	76	4.04	3.60**	4.50	4.75	4.00	3.67**	4.20**	3.67**	4.00	4.34**
Sensitivity	76	3.94	4.00**	4.00	4.00	3.67	3.83**	4.10**	4.00**	3.34	4.00**
Decision tree	31	3.04	2.60	3.50	3.50	3.67	3.67	2.70**	2.17**	3.34	3.34**
Monte Carlo	13	2.87	2.60	1.00	2.50	3.34	3.00	2.80**	2.50**	4.34	3.34**
Risk adjusted	16	2.56	3.20**	1.00	2.75	2.34	2.67**	2.40**	2.83**	2.67**	2.34**

Techniques	Frequently/ Mostly	Mean	Sri Lanka: Industry Sectors								
			Utilities	Information	Energy	Telecom	Industrials	Consumer stables	Materials	Health Care	Consumer Discretionary
Scenario	79	4.25	5.00	5.00	4.00	4.34	4.35	4.36**	4.25**	4.25**	3.85**
Sensitivity	34	3.18	2.00	2.00	2.75	3.34	3.25**	3.07**	2.50**	3.25**	3.92**
Decision tree	12	2.92	2.00	3.00	2.75	2.67	2.90**	3.14**	3.00**	2.50**	3.08**
Monte Carlo	13	2.66	3.00	2.50	2.50	2.00	2.60**	2.86**	2.50**	2.38**	3.00**
Risk adjusted	29	3.04	3.00	3.00	2.50	2.34	3.15**	3.36**	2.88**	2.75**	3.15**

Table 15 RAT with number of employees

Techniques	Australia						Sri Lanka					
	Frequently/ Mostly	Mean	Number of Employees				Frequently/ Mostly	Mean	Number of Employees			
			<100	100-250	250-500	>500			<100	100-250	250-500	>500
Scenario	76	4.04	5,00	5.00	3.50	4.00	79	4.25	0.00	3.86	4.53**	4.19
Sensitivity	76	3.94	4.50	5.00	3.50	3.90	34	3.18	0.00	4.00**	2.89	3.17**
Decision tree	**31**	3.04	1.50	3.00	3.00	3.13**	12	2.92	0.00	2.86	2.84	2.96**
Monte Carlo	13	2.87	1.50	3.00	1.00	3.03**	13	2.66	0.00	2.57	2.58	2.70**
Risk adjusted	16	2.56	2.50	3.00	2.00	2.58**	29	3.04	0.00	3.00	2.58	3.23**

Table 16 RAT domestic income

Techniques	Australia						Sri Lanka					
	Frequently/ Mostly	Mean	Domestic Income				Frequently/ Mostly	Mean	Domestic Income			
			<20	20-40	40-80	>80			<20	20-40	40-80	>80
Scenario	76	4.04	4.67**	3.50	4.00**	4.07	79	4.25	3.00	5.00	4.23**	4.28
Sensitivity	76	3.94	4.34	4.50**	3.90**	3.82	34	3.18	3.00	3.50	3.00	3.26**
Decision tree	31	3.04	2.67	2.50	2.80	3.25**	12	2.92	3.00	3.50	2.95	2.88**
Monte Carlo	13	2.87	2.34	1.50	3.30	2.96**	13	2.66	3.00	3.00	2.59	2.66**
Risk adjusted	16	2.56	1.34	2.50	2.70	2.64**	29	3.04	3.00	2.00	2.91	3.15**

Table 17 RAT with ownership

Techniques	Australia				Sri Lanka			
	Frequently/ Mostly	Mean	Ownership		Frequently/ Mostly	Mean	Ownership	
			Domestic	Foreign			Domestic	Foreign
Scenario	76	4.04	4.08**	4.50	79	4.25	4.24**	4.40**
Sensitivity	76	3.94	3.90**	4.50	34	3.18	3.19**	2.80
Decision tree	31	3.04	3.18**	1.50	12	2.92	2.91**	3.00
Monte Carlo	13	2.87	3.03**	1.50	13	2.66	2.64**	3.00
Risk adjusted	16	2.56	2.58**	2.50	29	3.04	3.01**	3.40

Table 18 RAT with overall risk

Techniques	Australia							Sri Lanka						
	Frequently/ Mostly	Mean	Overall Risk Situation					Frequently/ Mostly	Mean	Overall Risk Situation				
			Very High	High	Moderate	Low	Very Low			Very High	High	Moderate	Low	Very Low
Scenario	76	4.04	4.50	4.05	3.95**	4.00	0.00	79	4.25	0.00	3.67	4.28**	4.23**	5.00
Sensitivity	76	3.94	4.25	4.11	3.68**	4.00	0.00	34	3.18	0.00	2.67	3.32	2.95**	3.00
Decision tree	31	3.04	2.50	3.42	2.79	3.00	0.00	12	2.92	0.00	3.00	2.89	2.95**	3.00
Monte Carlo	13	2.87	2.25	3.26	2.58	3.00	0.00	13	2.66	0.00	3.00	2.68	2.55**	3.00
Risk adjusted	16	2.56	3.00	2.47**	2.47	3.00	0.00	29	3.04	0.00	3.67	3.06	2.91**	3.00

Likert scale of 1 (never) to 5 (frequently) used. ** denotes significant at the 5% level.

5 Conclusions

Most Australian companies select DCF as their most frequently used CB practice and DCF usage appears to be greater than what is noted in prior studies. Consistent with many earlier studies, it was found that a large number of Australian-respondent firms use PBP, often in conjunction with DCF techniques. Also, scenario analysis and sensitivity analysis are widely used by Australian firms.

Sri Lankan companies tend to use PBP more than other CB evaluation techniques.
Among the Sri Lankan respondent firms, after PBP, IRR is the next most used CB technique. Sri Lankan firms use scenario analysis more frequently than Australian firms. However, Australian firms are more likely to use more sophisticated tools than their Sri Lankan counterparts. The study also notes that the CB practices of firms tend to reflect the size, resources and capabilities of the firm and its managers.

While every reasonable effort has been made to minimise limitations that are often ascribed to questionnaire surveys, such limitations cannot be altogether eliminated. A further limitation is that CB mechanisms that are interrelated with business scope and financing portfolio are not considered in this study.

In summary, the key finding of this study is that the choice of CB techniques appears to be often more related to attributes of the firm than to the culture and attributes of the nation in which the firm operates. What is of great interest is that Australian firms were more likely to use multiple modes of CB evaluation than Sri Lankan firms and their appetite for risky projects appears to be significantly greater than that of their Sri Lankan counterparts.

References

Arnold G and Hatzopoulos P 2000, The theory-practice gap in capital budgeting: Evidence from the United Kingdom, *Journal of Business Finance and Accounting, Vol.*27, No.6, *pp*. *603-625.*

Baker K, Dutta S and Samir S 2011, Management views on real options in capital budgeting. *Journal of Applied Finance, Vol.21, No1, pp. 18-29*.

Ballantine J, Galliers R and Stray S 1995, The use and importance of financial appraisal techniques in the IS/IT investment decision-making process—recent UK evidence. *Project Appraisal, Vol.10,No.4, pp. 233-241*.

Bennouna K, Meredith G and Marchant T 2010, Improved Capital budgeting decision making: Evidence from Canada, *Management Decision, Vol.48,No.2, pp. 225-247.*

Block S 1997, Capital budgeting techniques used by small business firms in the 1990s, *The Engineering Economist, Vol. 42, No.4, pp. 289-302.*

Brounen D, Jong A and Koedijk K 2004, Corporate finance in Europe: Confronting theory with practice, *Journal Financial of Management, Vol.33,No.4, pp. 1-40*.

Chan H, Kamal H and William S 2004, Capital budgeting practices of Chinese firms. *The Journal of Global Business Management, Vol.1,No.1, pp. 20-26.*

Duchin R and Sosyura D 2013, Divisional managers and internal capital markets. *The Journal of Finance, Vol.68,No.2*, pp. 387-429.

Freeman M and Hobbes G 1991, Capital budgeting: Theory versus practice. *Australian Accountant, Vol.*61,No.1, pp. 36-41.

Gervais S, Heaton J and Odean T 2012, Overconfidence, compensation contracts, and capital budgeting. *The Journal of Finance, Vol.66,No.5, pp. 1735-1777.*

Graham J and Harvey C 2001, The theory and practice of corporate finance: Evidence from the field, *Journal of Financial Economics, Vol.2,No.3, pp. 187-243.*

Haddad K, Sterk W and Wu A 2010, CBpractices of Taiwanese firms. *Journal of International Management Studies, Vol. 5,No.1, pp. 178-182..*

Hamzah A and Zulkafli A 2014, Multiple shareholders structure (MSS) and corporate financial policy and corporate financial policy. *Journal of Finance and Bank Management, Vol.2,No.1, pp. 107-134.*

Hassan M, Hosny L and Vasilya S 2011, Capital investment practices: A survey of large corporation in developing market. *Global review of Accounting and Finance, Vol.2,No.2, pp. 39-60.*

Jog M and Srivastava A 1995, Capital budgeting practices in corporate Canada. *Financial Practice and Education, Vol.5,No.2, pp. 37-43.*

Kester G, Chang R, Echanis E, Haikal S, Mansor M, Skully M, Tsui K and Wang, C 1999, Capital budgeting practices in the Asia-Pacific Region: Australia, Hong Kong Indonesia, Malaysia, Philippines, and Singapore, *Financial Practice and Education, Vol.9,No.1, pp. 25-33*.

Kester G and Chong T 1998, Capital budgeting practices of listed firms in Singapore. *Singapore Management Review, Vol.20,No.1, pp. 9-23.*

Leon F, Isa M and Kester G 2008, Capital budgeting practices of listed Indonesian companies. *Asian Journal of Business and Accounting, Vol.1,No.2, pp. 175-192.*

Lilleyman P 1984, Capital budgeting: current practices of Australian organisations, *The Australian Accountant, Vol.54,No.2*, pp. 130-133..

Maroyi V and Margaretha V 2012, A survey of CBtechniques used by listed mining companies in South Africa. *African Journal of Business Management, Vol.*6,No.32, pp. 9279-9292.

McMahon R 1981, The determination and use of investment hurdle rates in capital budgeting: a survey of Australian practice. *Accounting and Finance, Vol.21,No.1, pp. 15-35.*

Peel M 1999, Planning, business objectives and CBin Japanese, German and domestic SMEs: some evidence from the UK manufacturing sector, *Journal of Small Business and Enterprise Development, Vol.6,No.4, pp. 350-365.*

Pike R 1986, The Design of CBprocessesand the corporate context. *Managerial and Decision Economics, Vol.7,No.1, pp. 187-195.*

Pike R 1996, A longitudinal survey on CBpractices. *Journal of Business, Finance and Accouning, Vol.23,No.1, pp. 79-92.*

Roubi R, Barth R and Faseruk A 2011, CBuse in Canada: Sophistication and risk attributes, *Journal of Applied Business Research, Vol.7,No.4, pp. 83-89.*

Ryan P and Ryan G 2002, CBpractices of the fortune 1000: how have things changed?, *Journal of Business and Management, Vol.8,No.4, pp. 1-16.*

Satish V, Sanjeev G and Roopali B 2009, A survey of CBpractices in corporate India, *The Journal of Business Perspective, Vol.13, No.3, pp. 1-17.*

Shao L and Alan S 1996, Risk analysis and CBtechniques of U.S. multinational enterprises, *Managerial Finance, Vol.22,No.1, pp. 41-57.*

Tappura S, Sievanen M, Heikkila J, Jussila A and Nenonen N 2014, A management accounting perspective on safety. *Safety Science.*

Truong G, Partington G and Peat M 2008, Cost of capital estimation and CBpractice in Australia, *Asutralian Journal of Management, Vol.33,No.1, pp. 95-122.*

Verma S, Gupta S and Batra R 2009, A survey of Capital budgeting ,practices in corporate India. *The Journal of Business Perspective, Vol.13,No.1, pp. 1-17.*

Wnuk-Pel T 2014, CBpractices in non manufacturing companies in Poland, *Social Sciences, Vol.82,No.4, pp. 59-69.*

Wong K, Farragher E and Leung R 1987, Capital investment practices: A survey of large corporations in Malaysia, Singapore and Hong Kong, *Asia-Pacific Journal of Management, Vol.4,No.2, pp. 112-123.*